ADDERLINK X SERIES X2-Gold

Keyboard, video, mouse, RS232 and audio extender giving sharp, bright and ultra high-resolution video images at distances up to 200m (650ft)

PRODUCT DESCRIPTION

KVM Extension is used in a wide variety of scenarios to provide direct remote access to computers in environments where it is either inhospitable or impractical to place both the machine and control console in the same place. Past applications for these products are as diverse as data centres, broadcast studios, financial institutions and ship navigational systems.

The AdderLink X2-GOLD extends very high quality video, keyboard, mouse, RS232, and audio up to 200m/650ft over Category 5 or higher CATx cable. Building on the hugely successful AdderLink X-GOLD, the AdderLink X2-GOLD has been redesigned to significantly improve the performance, specification and value for money whilst retaining industry-leading rack densities and a modular and flexible solution.

Increased video performance

A significant improvement of the AdderLink X2-GOLD is the increased distance over which video can be transmitted and the very high resolutions that can be achieved at these distances. Industry leading resolutions of 1600 x 1200 are achievable at 200m/650ft and 1280x1024 at 200m/650ft. For these distances and resolution to be achieved several engineering challenges were overcome;

Video compensation

When transmitting video signals over extended distances there is an inevitable degradation of the signal and it is necessary for any KVM over CATx extender to compensate for this. How this is implemented greatly affects the quality of the image and the AdderLink X2-GOLD applies a high level of signal compensation that allows for a greatly increased range of very smooth and fine adjustments.

Brightness control

Another consequence of extending video over long distances of CATx cable is a dimming of the image. Sometimes this can be corrected by brightness controls of the monitor but the range of correction offered by the monitor may not be sufficient. The AdderLink X2-GOLD offers its own brightness correction to ensure that the image is crisp, clear and bright, regardless of the distance.

Integrated De-Skew

Video signals are transmitted as separate Red, Green and Blue (RGB) signals and KVM over CATx extenders use one of the 4 pairs in a CATx cable for each colour. Because of the way in which CATx cables are constructed, specifically Cat5e and Cat6, each pair length can differ from another meaning that one colour can take longer to arrive than another resulting in colour splitting effects (skew). The user sees this as colour shadows on high contrast screen images. The skew adjustment works by delaying or advancing particular colour signals so that they are delivered to the monitor at precisely the same time. The AdderLink X2-GOLD has integrated skew correction with a 300MHz bandwidth, meaning that it is more than powerful enough to negate the negative effects of the skew.

Audio

Extending audio using KVM extenders can be difficult, particularly when audio of a high quality is required. Analogue transmission methods produce far from satisfactory results but digital transmission has its own potential pitfalls with unwanted clicks being a common occurrence. The AdderLink X2-GOLD units ensure that the transmitter and receiver clocks are synchronised to ensure that no audio is ever lost or added, thus preventing annoying audio clicks.

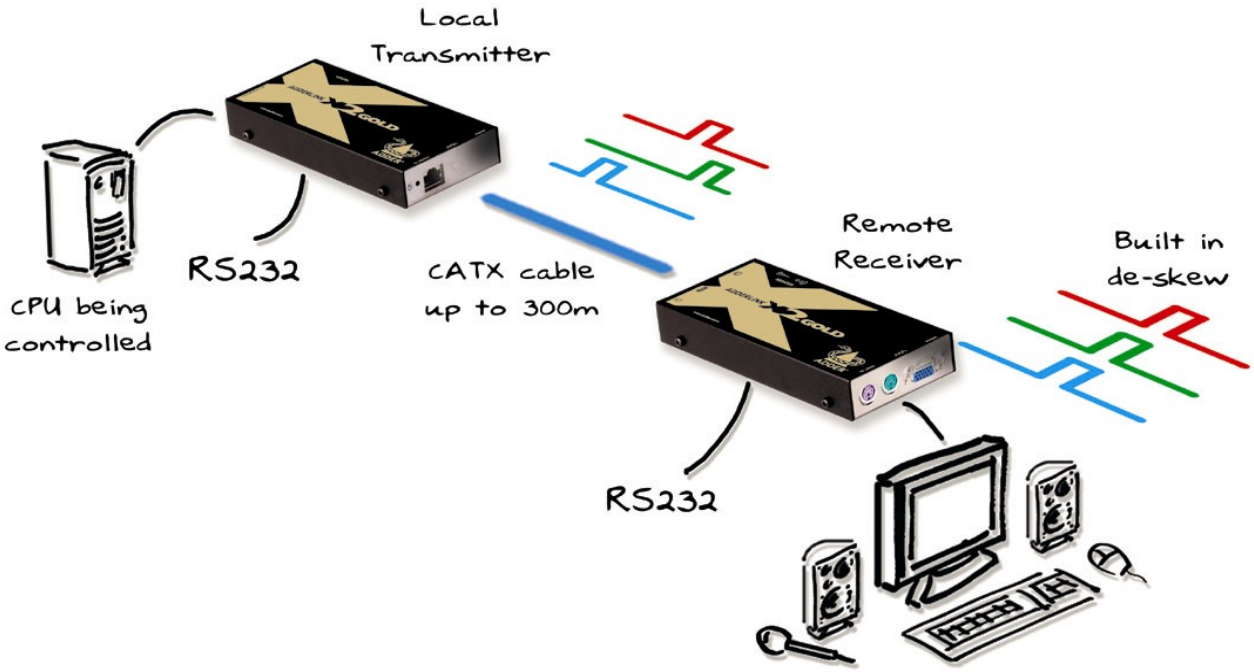
Emulated DDC

Display Data Channel support is an area that is often ignored on extenders and KVM switches in general. Display Data Channel is a communication standard that allows a computer monitor to inform a video card of its capabilities. The video card can then configure itself to present an image to the monitor in the most efficient way. Unless a device actively supports DDC this communication cannot take place. Sometimes this is

just inconvenient and requires users to manually configure display options. Without this circuitry, some well known high performance video cards cannot be used at high resolutions.

PRODUCT FEATURES

- Extends KVM, audio and RS232 across a single CATx cable
- Fully transparent RS232 interface enables a wide range of serial devices to be connected
- Extra fine video quality at a resolution of up to 1600 x 1200 at 200m,
- LEDs show the status of connected devices
- Integrated state of the art 300MHz DeSkew circuit
- Use stand alone or rackmount 16 modules across 2U
- Operation is software independent so the X2-GOLD may be used with all common operating systems including DOS; Windows 3.X,95,98,NT,2000,ME,XP; NetWare; Linux; OS/2 etc
- Digital (44.1kHz, 16Bit) audio transmission delivers high fidelity, clickless stereo audio for speakers and microphones
- Advanced spike suppression circuits for reliability in 'noisy' installations
- Provides a convenient and secure method of remotely locating PCs and file servers without compromising control or convenience
- All metal construction
- Includes CPU connection cable for easy installation
- Password security prevents unauthorised use
- Flash upgradeable via the keyboard ports enabling future enhancements and upgrades to be easily downloaded
- Supports Microsoft IntelliMouse, IntelliMouse Explorer, Logitech and other common wheel mice
- Supports automatic and fine user-adjustable video compensation
- User settings are retained in EEPROM memory even when the X2-GOLD is powered off
- Mixed AT/PS2 keyboards and PS2/RS232 mice supported as standard
- Keyboard data is kept in its native format ensuring the additional keys on enhanced keyboards are supported
- Supports keyboard modes 1, 2 and 3 and mouse prompt and stream modes for maximum compatibility
- Power / activity indication confirm correct operation
- 19 inch rack mount kit available
- Fits in the X-Series 19 inch rackmount chassis



TECHNICAL SPECIFICATIONS

Video resolutions - 1600 x 1280 at distances up to 200 metres/650 feet, 1280 x 1024 at distances up to 300 metres/1000 feet.

Extension distance - Up to 200 metres / 650 feet using CATx cable (x=5,5e,6,7).

Extension technology - Differential analogue signalling for video signals, differential digital signalling for PS/2 keyboard, PS/2 mouse, audio, RS232 and DDC signals. Signals are multiplexed so that only one CATx cable is required.

Devices supported - Supports PS/2 style keyboard, PS/2 style mouse, flat-screen and CRT style monitors with standard HD-15 video connectors, stereo speakers and microphone. Also extends a transparent RS232 connection which may be used for touch-screens or a wide variety of other serial devices.

Cable equalisation - Finely adjustable cable equalisation amplifiers enable the video sharpness and brightness to be independently adjusted using the keyboard. Coarse and fine adjustment contol is provided for quick setup. Settings are persistent even when the X2-GOLD is powered off which means that setup only needs to be done once. Automatic and manual equalisation modes are provided.

Integral de-skew - Red, green and blue colour signals may be independently delayed relative to the other colours to compensate for the colour skew introduced by longer CATx cables. The cable skew is produced due to wire length differences between different twisted pairs in a CATx cable that arise due to the different twist rates used to reduce signalling crosstalk. The amount of cable skew seen depends on the cable type used and the cable length. The X2-GOLD provides up to 62ns of de-skew for

each colour with a fine 2ns resolution. This means that high resolution video can be accurately de-skewed even at long cable distances. The de-skew circuitry supports 300MHz bandwidths which means that the de-skew function does not adversely affect the video quality (a common problem on older generation extenders). De-skew setup is easily done using the keyboard and settings are persistent even when the X2-GOLD is powered off which means that setup only needs to be done once.

Keyboard control - The cable equalisation and skew settings are controlled in 'configuration mode' using the keyboard attached to the remote (KVM console-end) unit. Configuration mode is accessed using keyboard hotkeys. These hotkeys may also be used to lock the remote unit (if a password has been set). Hotkeys are variable and may be disabled if required. Feedback is provided to the user using the keyboard num, caps and scroll lights.

Indicators - The remote and local units are fitted with a link/activity indicator that shows the link status and indicate keyboard and mouse data activity.

Computer / KVM switch compatibility - Compatible with desktop, rack mount and laptop PCs with PS/2 keyboard and mouse connections. May also be used with RS/6000, Alpha and SGI computers and a wide range of KVM switches. Adder can provide a range of KVM switch and conversion cables for connection to PC, Sun and Macintosh computers that have USB or Sun (8-pin) connectors.

Operating system compatibility - Compatible with all major operating systems including DOS, OS/2, UNIX, MS Windows 9x, NT, 2000, XP NetWare and RS6000.

Keyboard support - Supports PS/2 style keyboards with 6-pin mini-DIN connectors. Operates in modes, 1, 2 and 3 and supports individual typematic states per key. Supports standard layout keyboards and enhanced 'Internet style' keyboards with extra keys. Supports all keyboard language layouts.

Mouse support - Supports a wide range of PS/2 style 2 button, 3 button, wheel, IntelliMouse (3 button with wheel), IntelliMouse Explorer (5 button with wheel) and other mice that support the Microsoft ® mouse signalling protocols.

Audio - Transmitted as digital signals to ensure high fidelity and low noise levels. 44.1 kHz, 16-bit audio sampling. Supports four audio channels (stereo audio signals in both directions simultaneously). Phase locked sampling clocks ensure that there are no unwanted clicks when no sound is being played.

RS232 - 'Transparent' serial port operation ensures wide device compatibility without the need to configure baud rates or protocols on the X2 to match your equipment. Auto baud rate sensing ensures that devices that switch baud rates (such as some touch screens) are supported. All handshake lines are supported for maximum compatibility. Baud rates up to 57,600 are supported.

Rack mount options - Both the local (computer-end) and remote (KVM console-end) units may be rack mounted in the X-Series rack mount chassis. This chassis enables 16 units to be mounted in 2U of 19-inch rack space. The units are rack mounted using the optional rack mount face plate (part code: X2-RMK-GOLD).

Connectors (Local computer-end unit) - 1 x 25-way female connector for computer connection, 1 x RJ45 connector for CATx cable connection. 2.5mm DC jack for optional power adapter (only required for video only applications).

Connectors (Remote console-end unit) - 1 x purple 6-pin mini-DIN female keyboard connector, 1 x green 6-pin mini-DIN female mouse connector, 1 x blue 15-pin high-density D-type female connector for monitor connection, 1 x light green 3.5mm audio jack and 1 x pink 3.5mm audio jack for speaker and microphone connection. 1 x RJ45 connector for CATx cable connection. 2.5mm DC jack for power adapter.

Physical (Local computer-end unit) - Metal case (aluminium and stainless steel), 172mm x 26mm x 75mm, 430g, fits into one slot width in the X-Series rack mount chassis (16 units fit into 2U of rack space).

Physical (Remote console-end unit) - Metal case (aluminium and stainless steel), 172mm x 26mm x 75mm, 430g, fits into one slot width in the X-Series rack mount chassis (16 units fit into 2U of rack space).

Power - The console-end unit is powered by an external 5V DC, 2A power supply with an IEC power cable connection. A country specific power cord is provided. The computer-end unit is normally interface powered via the PS/2 keyboard connection but may alternatively be powered using an optional power supply. Both units are fused with auto resettable fuses.

Flash upgrades - The X2-GOLD remote and local units are flash upgradeable to take advantage of product enhancements and upgrades. The units may be flash upgraded via the PS/2 keyboard ports from a connected computer. Flash upgrade mode is accessed using option switches mounted on the side of the local and remote units.

Password protection mode - The X2-GOLD may be locked using a hotkey combination from the keyboard if a password has been loaded into the unit. The unit may then only be unlocked using the password. The video is blanked whilst the remote unit is locked.

Spike suppression - The X2-GOLD is fitted with spike suppression circuits.

Application - The X2-GOLD is not suitable for linking between buildings.

Display Data Channel - DDC signalling is supported to enable the computer to communicate with the monitor and thus configure its video card for optimal operation.

Package contents - Local (computer-end) unit, remote (KVM console-end) unit, 2 metre long computer interface cable, computer serial interface cable, IEC style power supply and power cord, safety and installation leaflet, CD manual, stick on rubber feet. (Note: the X-Series rack panels are not included and need to be purchased separately as required).

Optional accessories - Optional power adapter for local unit (part code: PSU-IEC-5VDC), X-Series rack mount chassis (part code: X-RMK), rack mount plate for local/remote unit (part code: X2-RMK-GOLD), X-PDM4-UK.

Approvals - FCC class A, CE marked .

Use with other Adder products - May be used together with other X2 and X-Series extenders where multiple video head or USB extension is required. For local access at the computer-end, the X2-GOLD may be coupled to an AdderView Prism.

Power – Operating Voltage: 100-240VAC
Power Frequency: 50-60Hz
Usage: 5VDC at 500mA

Temperature Tolerance – 0-40˚C (32 to 104˚F)

Humidity Tolerance – 5 to 60% non condensing